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ABSTRACT

Based on a 1982 study trip to the Socialist Republic (SR) of Macedonia in Yugoslavia, this report describes the need for professional library education in Macedonia and presents recommendations for the establishment of a master's degree program in information studies at the University of Skopje. Sections cover the trip itinerary; professional education in Croatia and Herzegovina; the Macedonian scientific and technical information infrastructure and related organizations, institutes, and libraries; the general library/information infrastructure in SR Macedonia; manpower needs for professional librarians; the nature of present-day library and information work; possible forms of professional library education; undergraduate and graduate education in SR Macedonia, particularly at the University of Skopje; and results of discussions with government officials and educators. Recommendations for establishing library education at the University of Skopje are then presented, covering teaching staff requirements, recommended visits of observation to operational library/information units, necessary equipment, collection of professional literature to support the program, recruitment of expatriate staff, overseas staff training, and course content. An appendix presents extracts from the 1978 "UNISIST Guidelines for Curriculum Development in Information Studies." (ESR)

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Establishment and development of national and regional training programmes in the field of information

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NATIONAL INSTITUTE OF EDUCATION
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Professional Education for Library and Information Work in the Socialist Republic of Macedonia

by
Wilfred L. Saunders

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Y U G O S L A V I A

PROFESSIONAL EDUCATION FOR LIBRARY AND INFORMATION WORK IN THE SOCIALIST REPUBLIC OF MACEDONIA

by Wilfred L. Saunders

Report prepared for the Government of the Socialist Federal Republic of Yugoslavia by the United Nations Educational, Scientific and Cultural Organization (Unesco)

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1. The Brief. This is the report of a mission to the Socialist Republic of Macedonia, in the Socialist Federal Republic of Yugoslavia, carried out under contract with Unesco during the period 30 May to 19 June, 1982. The terms of reference of the mission were as follows :

> "... to advise the Commission for Informatics and Statistics of the Republican Scientific Community of Macedonia on setting up training facilities, perhaps at the University of Skopje, to prepare personnel for the scientific information services which the Republic hopes to enlarge and improve. He will investigate, so far as time permits, the extent and nature of the professional training needs for information specialists in Macedonia. He shall examine the question of location of prospective training programmes. He will outline the most appropriate course content and organisation and give indications of needs for teachers, teaching facilities and perhaps the training of teaching staff."

2. Methodology. To achieve the objectives set out above an intensive programme of activities was organised by Mrs. Zdravka Pejova, Secretary of the Commission for Informatics and Statistics. Mrs. Pejova not only organised the programme but accompanied me throughout, acting both as interpreter and as elucidator of the STI system with which it was my business to familiarise myself. My debt to Mrs. Pejova for the immaculate efficiency with which the whole programme was executed is very great indeed.

3. The principal intention of the programme was to familiarise me with the Macedonian library and information infrastructure; to provide an insight into professional education needs and the 'market' for the products of such education; and to enable me to carry out discussions at the highest level with the organisations and individuals who would need to be involved in the provision of such professional education.

4. Programme. My programme of activities was as set out below. The normal pattern was an extended discussion with the principal officer concerned, usually with several senior staff present. In the case of libraries this was normally followed by a tour of the building and the collections.

(a) Official (Governmental) Organisations

Republican Committee of Education and Science (discussions with the Minister)

Republican Committee of Culture (discussions with the Commissioner

Self-managing Community of Interests for Scientific Activities (discussions with the President, Secretary and other members)

Commission for Informatics and Statistics (discussions with the President, Secretary and others)

Republican Commission for Cultural Relationships with Foreign Countries.

(b) Libraries

National and University Library
Referral Centre in SR Macedonia

Macedonian Academy of Sciences and Arts

Tetova City Library, followed by a meeting with public librarians from other areas

Department of English Language and Literature of the University of Skopje (as a representative departmental library).

(In addition there were libraries or library-type activities associated with the Working Organisations and Institutes set out under (d) and (e) below).

(c) Professionally-related Activities and Organisations

Republican Institute for Informatics

Union of Library Associations of SR Macedonia

Editorial Board of the professional journal "Bibliotekarska-iskra"

Working group responsible for preparing the Librarianship and Information Studies curriculum

Biomedical Scientific Information Project (Faculty of Medicine).

(d) Working Organisations

Textile Industry Complex R&D Department (Tetova)

Elektromontaža R&D Department (Ohrid)

Steel Works of Skopje (R&D) Institute

(e) Institutes

Institute for National History (of Skopje University)

Institute of Earthquake Engineering and Engineering Seismology (of Skopje University)

Hydrobiological Institute (of Bitola University - at Ohrid)

(f) University of Skopje "Cyril and Methodius"(in addition to its Library and Institutes, mentioned above)

Rectorate (discussions with the Rector and his Deputy)

Department of Comparative Literature (discussions with the Professor and his staff concerning the proposed branch "Librarianship and Information Science")

University Centre for Mathematics and Technical Sciences (discussion with the Dean, Deputy Dean and a group of over 40 teaching staff, mostly from the Faculty of Electronic Engineering, concerning a postgraduate programme in Library and Information Studies).

(g) Lectures, etc.

(i) Lecture to an invited audience of about 80 persons on "Contemporary trends in librarianship and information science"

(ii) "Round Table" with members of the Commission for Informatics and Statistics and others, on "Use of contemporary information and telecommunication technology in the processing, transmission and use of S.T.I."

(iii) Lecture on the subject of (ii) above, to staff and postgraduate students of the Institute of Earthquake Engineering and Engineering seismology.

Professional Education in Croatia and Bosnia and Herzegovina

5. As for practical purposes the only formalised professional education programmes in Yugoslavia are those carried out in Croatia and Bosnia Herzegovina it was recommended by the Yugoslav Committee for UNISIST that a brief stay at Zagreb and Sarajevo, en route to Skopje, would provide me with helpful background for my Macedonian assignment. This indeed proved to be the case.

6. Croatia: Zagreb. An excellent programme was organised by Dr. Markić Čučuković which enabled me to extract maximum benefit from my brief visit. This programme of discussions introduced me not only to the Croatian professional education scene but to the role and activities of its National Library and its Library Association. I am extremely grateful to Dr. Markić Čučuković for the very great trouble she took to ensure that I got the most from my visit, and also for her very kind personal hospitality.

7. In Croatia as in all the other Republics except Macedonia there is a state examination for practising librarians which may be taken after a year of practical experience (in practice normally much longer). About 20 candidates present themselves for examinations which are held twice a year and lead to a certificate. The standard of this certificate was said to be not high and it would appear to be at sub-professional level.

8. At a much higher level is the Diploma in Librarianship course conducted at the University of Zagreb and based on the Faculty of Philosophy. Dr. Markić Čučuković and Miss A. Horvot provide the full-time staff for the course and they draw on the services of local senior librarians and academics from other departments on a part-time basis. Students may join the programme, which occupies at least 4 semesters (2 years) of

study, after the completion of their first two years in the university. During these first two years they will have been studying a traditional academic study and in years 3 and 4 this study will continue in parallel with work for the Librarianship Diploma.

9. Selection for the Diploma is based on a written test and an interview and the general aim is to select students with a variety of subject backgrounds; though in practice they are mainly humanities students from the parent Faculty of Philosophy. About 30 students are admitted each year and Dr. Markić Cučković prefers entry to be later, if possible, than the beginning of the 3rd year of university studies. Until last year it had been possible for working librarians to be admitted to the programme.

10. Within the university students are allowed 30 hours of study time a week and of these the Library School is allowed 20% - 6 hours. Because of shortage of staff this is in any case as much as can be coped with. The programme of studies includes subjects appropriate to traditional librarianship, with some injections of information science topics, and is in accordance with the general thinking of the Library Association. A problem associated with the course is that apparently many students take a very long time to complete it, often several years.

11. I understand that the University also offered a four-year full-time undergraduate course in socio-humanistic information sciences. This was very heavily computer-orientated. It is to become a two-year Information Science course run on the same basis as, and in parallel with, the Librarianship course, with some subjects in common. There

is a quota of 15 students a year and the intention is to produce staff for the information centres and some teachers

12. For a dozen years or more there had also been at Zagreb a postgraduate programme leading to a Masters degree. It was created and led by Professor Tijak but since his death, two years ago, its future has been uncertain. It is my understanding that it has now been decided to continue with it. When it was created it set out to incorporate modern thinking, particularly in relation to information science, and it has been the main route to higher professional qualification not only for Croatian librarians, but also for those from other Yugoslav republics. Like other postgraduate courses - and unlike the undergraduate diploma programme described above - it is not provided free of charge by the state: students would normally have paid for it from their own pockets. In the early years, at least, students were accepted if they had already passed the state examination (para. 7. above) but I understand that this requirement was later removed. An inevitable weakness was that students from far afield could not get to Zagreb for lectures, and self-preparation for the examinations was normal in such cases. I was told that some students took as long as 10 years to complete the programme and qualify.

13. Bosnia- Herzegovina: Sarajevo. My programme here was principally concerned with the National and University Library and the Referral Centre. I was also asked to lecture on Contemporary trends in librarianship and information science to an invited audience of local library and information workers. This lecture and the discussions which followed provided a valuable opportunity to make contact with local practitioners and to gain some insights into professional matters and problems. I am much indebted to Mrs. Tatjana Prastalo

who made all the arrangements.

14. I understand that the university offers a programme in librarianship in combination with literary studies - in, I believe, the Faculty of Comparative Literature. My strong impression was that this programme is not highly regarded by the practising profession and I was sorry that none of those connected with it were able to be present at the lecture or to be available for discussion.

Macedonia: General

15. My brief visits to Zagreb and Sarajevo provided useful if necessarily limited background for my main Macedonian assignment. I quickly came to realise the high level of autonomy of the indivudual republics in regard to many activites - not least in the fields of Education and Library and information provision - and my early discussions in Skopje at the Self Managing Community of Interests for Scientific Activities, and the Commission for Informatics and Statistics gave valuable insights into distinctively Macedonian problems and viewpoints. It is clear that SR Macedonia considers itself to be one of the poorer and least developed of the republics. It is nevertheless equally clear that enormous progress has been made in the post-war years. I was told, for example, that pre-war there was 80% illiteracy and that 30 years ago only 200 of the population had received higher education; now, in 1982, it has two universities (Skopje and Bitola) and 50,000 students undergoing higher education. As Macedonia has a tremendously rich cultural heritage which it is determined to preserve, the very heavy demand for funds for this purpose is of course in competition with the needs of economic and material development - including the provision and development of library and information services.

16. In such a situation the ordering of priorities is inevitably a most difficult and delicate task and it is a measure of the importance attached to the subject of my own assignment that I was so well received, with understanding and sympathy for my objectives, at the very highest levels. There was in many quarters encouraging evidence of a developing appreciation of the central and vital role which freely flowing scientific and technical information has to play in economic, social and cultural development; and it is worth stressing that in Macedonia "scientific", in this context, includes the humanities and the social sciences.

The Scientific and Technical Information Infrastructure and the Organisational Framework

17. The best measure of the extent to which a country appreciates the importance of scientific and technical information to its national development is provided by the existence - or otherwise - of the sort of library and information infrastructure which is to be found in a highly developed country. The components of such an infrastructure are readily identifiable, as is the organisational framework which welds them together, and in paragraphs 18 to 23, which follow, I shall be considering the Macedonian situation as it emerged during the course of my mission.

18. The Commission for the System of Scientific Information. (Commission for Informatics and Statistics). This is a body of the Republic Community of Interest for Scientific Activities with responsibility for creating information science policy; it is responsible for coordination of the activities of the STI system, together with the professional and other information needs that are felt in all walks of life. It has prepared a 5-year plan (1981-85) for the development

of the System of STI, and this plan is regarded as an integral part of the 5-year plan for the development of scientific activities in general. This is turn fits into the broader socio-economic development plan of the Republic for 1981-85. At the same time it is part of the 5-year development plan of the Federal Commission for SSTI. The general starting point of the Plan is the UNISIST II concept of inter-linking between the STI system and the system of museums, archives, etc.

19. Libraries and Information Services: General. There are two main "scientific" libraries - the National and University Library, and the Library of the Macedonian Academy of Sciences and Arts; within the former there is a Referral Centre, as is the case with the National libraries of all the other republics. There are some 215 special libraries and INDOC services belonging to "working organisations"; in this context "Special libraries" include academic libraries, libraries of research organisations (institutes), of industrial organisations, etc. Of the 215, 64 belong to the academic and research libraries group and 120 to working organisations serving industry or social activities. The status of these Special libraries and INDOC services is not defined in the 1974 Library Law (see para.20, below), but I was told that at present almost none fulfils the requirements for a complete INDOC service, and that only about 90 possess some of the characteristics in question. There is in addition a Public Library system comprising 32 main public libraries, 205 branches and 17 mobile library "buses"; the City Library of Skopje itself has 25 branches. Each public library has a Children's section. Two million of Macedonia's total library stocks of 5 million volumes are in public libraries, the overwhelming majority being fiction - though there is now a trend towards acquiring more "professional" books. These figures of public library holdings are not regarded as satisfactory and it is aimed to raise holdings to

2 volumes per capita (i.e. 4 million volumes) by 1985. A conspicuous gap in library provision is what seems to be very inadequate provision of school libraries; however the Minister of Education and Science himself is fully aware of the importance of such library provision and assured me that he firmly believes in the key role of the library/ resources centre in the school.

20. Library Legislation. Current library law is provided by the 1974 Act, but a new Act is apparently imminent. The 1974 act covers independent libraries, "science" libraries, public libraries, libraries within working organisations, National and university libraries. The Referral Centre was created federally and is not covered by the Act. The National and University Library occupies under the Act a key position, being expected to carry out a central "parent" role, with responsibilitiy for overviewing library activities for the whole Republic, including education and training. In describing the present situation to me the Counsellor for the Ministry of Culture stressed the importance of the transformation of "classical" libraries from a passive, conservationist tradition into one which would stress the information role, with an emphasis on the need for a fully integrated library and information system.

21. Institute for Informatics. It seems appropriate to include this organisation in a general consideration of the infrastructure. It is relatively new and still evolving, and though it has a major concern with computer systems and hardware it has the more general objective of introducing contemporary information technology into all spheres of life: administration, industry, working groups, etc. It is also concerned with collecting relevant data for general planning within the Republic as a whole in respect of its own fields of interest. It has carried out a survey of education and training of manpower

for the systems which do exist and is collaborating with the Faculty of Electrical Engineering and Mathematics to increase the output of trained personnel. I was told that at the end of 1981 there were 80 computer centres, with 120 computers - mostly small or medium-sized, but with 10 large ones being installed.

The main general problem identified was the need to inculcate information awareness in the community at large, and the Institute's programme included exhibitions, demonstrations and scientific meetings.

22. Union of Library Associations of SR Macedonia. There are currently 420 members of this Association, which is open not only to librarians but to all "book-lovers". There is a Yugoslavian "Union" at Federal level, on the Assembly of which there are 15 representatives from each Republic. I was told that this professional association is quite a significant force in Yugoslavian library and information affairs, and that in addition to holding meetings it concerned itself with such matters as standards, rules, and library law.

23. Bibliotekarskaiskra. This is the Macedonian professional librarianship journal. It is published twice a year, and except for a 5 or 6-year gap has been in existence since 1955. 500 copies are produced, of which 50 go overseas. Its objectives are to foster scientific thought in Macedonian librarianship, to identify problems, to keep readers informed of new developments, to publish historical studies, to publish information relating to Macedonian and Yugoslavian librarianship and about the Community of Yugoslavian National Libraries. It also takes account of activities and developments overseas. It is planned to raise the journal to a higher standard, with English Language Summaries, etc.

All Republics have a librarianship journal of their own but there is no general one for Yugoslavia as a whole. However, there is to be a Yugoslavian Informatics journal and there is apparently already a journal called Informatics, published in Belgrade.

Observations on particular components of the Infrastructure, based on Visits and Discussions with Senior Staff

24. General. It will be clear from paragraphs 18-23 that most of the more obvious components of a national library/information infrastructure would appear to be present in Macedonia. At this stage it is appropriate to mention that I gained a clear impression of a deliberate, planned policy to create such a national system of library and information provision, in accordance with accepted international standards and policies: the influence of UNESCO and IFLA, for example, is strong and very apparent. In paragraphs 25-54 I shall be recording my more detailed perception of the library/information situation as revealed by visits to units which covered between them the whole spectrum of library/information activity - albeit on a very selective basis.

25. The National and University Library. Founded in 1944, this dual purpose library is housed in a fine modern building which it is already out-growing so far as book storage is concerned. Like the great majority of Macedonian libraries it operates on a closed access system. It is open to anyone over the age of 17. The service offered is reference only, not lending.

26. The library has legal deposit rights for all books published, not just in Macedonia but also in the whole of Yugoslavia. Of the book

stock of 1,550,000 volumes, 550,000 are books and 300,000 journals, the rest comprising special collections, pamphlets, etc. 2,000 of the 3,000 current journal titles which it receives each year are from abroad, but shortage of currency is a problem and there is heavy reliance on gifts and exchanges. Of its annual intake of 37,000 volumes, 12,000 are Yugoslavian imprints, while 5,000 are foreign, (most of the balance would appear to be duplicates and bound volumes of periodicals). There are several special collections, including Cyrillic manuscripts, Maps, Oriental manuscripts, an Art collection and a rare books collection of some 3,000 titles.

27. There are approximately 6,500 users and readers of whom 78% are students from the university, 9% scholars, 7% high school students and 6% others. 50 working organisations covering about 30,000 workers are users and there are said to be some 110-120,000 visitors to the library each year. The number of volumes circulated per annum is 80-90,000, with 2,500 inter-library loans.

These figures notwithstanding, my general impression, gained from discussion and observation, is that use of the library in general and particularly of the special collections is very low.

28. The total staff of the Library is 169: 103 professional and 66 sub-professional. My understanding is that 2 or possibly 3 of the staff hold the Zagreb Masters degree referred to in para.12, above, but that apart from these the designation "professional" means only that the staff in question are university graduates.

29. The Library accepts the bibliographical responsibilities associated with its National role: it maintains a union catalogue of foreign books held in all university and special libraries in Macedonia; it

distributes non-archival copies of legal deposit items to other libraries in Macedonia; it very actively encourages the use of I.S.B.D.'s; it prepares the Macedonian translation of the universally used U.D.C.; it has pioneered Cataloguing in Publication for the whole of Yugoslavia; it coordinates the exchange of catalogue cards amongst the libraries of the Republic; it is the link with the [Federal] Bibliographical Institute in Belgrade; its Bibliographical Department maintains (a) Bibliographica Macedonia, (b) Bibliography of material about Macedonia and by Macedonian writers, wherever published, and (c)Retrospective bibliography for Macedonia.

30. A further wide-ranging and very important responsibility of the Library is the development of libraries and librarianship in Macedonia. This includes the development of the library and information network, the provision of professional help and advice for libraries in need of it, the establishment of standards in technical processes, education and training, information and documentation on librarianship, statistical data, exhibitions and lectures.

31. These are extremely important responsibilities for the National and University library and they underline the very great significance of its central role as "parent" library for the whole Macedonian system. I had neither time nor opportunity to assess the effectiveness with which the library carries out these responsibilities in general but I should mention two matters which are relevant to my mission and which gave me some cause for concern. The first is that it has not as yet proved possible to make much progress with the coordination of the Republic's library and information resources into an integrated and mutually supportive whole; individual units seem to operate as self contained cells, operating in isolation from one another. Coordination of the sort required is of course

very difficult, but if Macedonia's library and information resources are to be used with maximum effectiveness and efficiency, such coordination is essential.

The second matter concerns training. The concept that all new library staff for all units should spend their first month at the National and University Library, undergoing a systematic and comprehensive introduction to library methods, processes, etc. is a very good one; but unfortunately - as I understand it - in practice such training has normally to be limited to cataloguing and classification. It is to be hoped that this limited approach to training will be enhanced as soon as possible.

32. One further point deserves some emphasis. Macedonia's National and University Library, in common with its opposite numbers in many other parts of the world, rightly places a major emphasis on its archival and conservation responsibilities, but it is not very service-orientated. Modern library and information practice and methods make it possible for such a library to offer the world of research and scholarship a dynamic and outgoing library and information service; and the cultural, scientific, and social needs of the nation make it essential that it should do so. This point, together with those raised in paras. 27 and 31, is directly linked with the matter of professional education - the subject of my mission - and I shall return to it later.

33. The Referral Centre There is a Referral Centre in each of the Republics, located in the respective National and University Libraries (the National Library in the case of Serbia), and sponsored by the respective Self-Managing Communities of Interest for Scientific Activities. The Referral Centre for SR Macedonia was established

at the National and University Library in 1976 with the same objectives as its sister Centres in other Republics. These objectives include the creation and maintenance of data bases of scientific institutions, publications and individual producers and users of information; the identification of information sources, between which it will act as a link; and the dissemination and encouragement of the use of Yugoslavian and foreign information. There is a Coordinative Council for Referral Activity which comes under the Yugoslav Commission for the Scientific Information System, and which is responsible for coordination at federal level.

34. The Referral Centre for SR Macedonia is known as the Department for Bibliographical Information and Referral Activity. It is a very important element in the scientific information infrastructure and has been actively creating data bases of Doctoral and Masters theses, reports on research projects, reference publications held by Macedonian libraries, scientific institutions and research units in SR Macedonia, INDOC services and special libraries, and biographical data of potential users of information. Other work of a similar nature is planned. An important role, in the absence of any foreign or international data bases in SR Macedonia, is that of informing SR Macedonia's potential users about the availability of such bases elsewhere in Yugoslavia. A small computer system is to be installed later in 1982.

35. The present staff comprises 6 graduates who cover between them a good range of disciplines, plus two assistant librarians and a typist. The team enjoys impressive and experienced leadership, but the fact that its staff are not professionally qualified constitutes a serious weakness. This will become even more marked when the Centre embarks

on its intended - and very laudable - intention of offering an information service in addition to its present activities. If library and information expertise can be added to the subject expertise already possessed by the graduate staff, this group has the potential to be a most powerful force in developing and raising the level of library and information activities in Macedonia - and all the more so if the expansion which is planned for the group should take place.

36. The Library of the Macedonian Academy of Sciences and Arts. This library was established with good financial support in 1968. It currently has 70,000 volumes and subscribes to 1,200 current journals. It is generally considered to be the most advanced of Macedonia's libraries and it is run in accordance with a book of rules created by the Director (who holds the Zagreb professional Masters degree), the employees and the Board. The collections are impressive and a good proportion is deployed on open access. 2,000-2,500 new titles are added annually. Of the 8 employees, 5 are university graduates, but apart from the Director none of them is professionally qualified.

37. The library is intended primarily for Academicians and serious scholars and research workers, though postgraduate students and undergraduates doing diploma courses may use it. In fact the impression is of a fine library which receives very little use indeed.

38. Apart from under-use, a further major problem which was identified to me was the duplication of the library's activities with those of other "scientific" libraries and the National and University library. Here is another example of the lack of coordination and planned complementary-ness, already referred to as a major shortcoming in the library and information system of SR Macedonia.

39. Public Libraries. These observations are based primarily on a visit to Tetova City Library, on discussions at Tetova with a group of Public Librarians, and on discussions with the Counsellor for the Ministry of Culture. Some basic facts about the public library system are given in para. 20, above.

40. All municipalities are covered by public library service but the degree of development differs considerably; I was told that there are ambitious plans for public library programmes in the less developed parts of the country. The materials provided by the public libraries comprise predominantly fiction, with school children providing the greater part of the readership. There is however a trend towards more "professional" books, and reference was made during my discussions with the Counsellor of the Ministry of Culture to a transformation towards an information orientation. So far as book stock is concerned, that which I actually saw appeared to be at a rather low level and much of it was in poor physical condition.

41. Just as the National and University Library has a "parent" responsibility at national level, so has each municipality its own "parent" library responsibilities for libraries of all kinds in its locality. So far as I could judge this mainly takes the form of professional advice, coordination and technical processing, but Tetova reported a very poor response from the working organisations whose book stocks it had offered to process and to whose workers it had offered a bibliobus.

42. The Director of the Tetova Public Library holds the Zagreb professional Masters degree, but I understand that no other public librarians are professionally qualified and that their recruitment is a local responsibility. It was put to me that the principal key to future public library development was professional education for their staff, and the lack of a proper professional awareness of how to present information and stock to users was identified as a particular weakness in the present public library situation.

43. The Working Organisations. These observations are based on visits to three large (and very different) industrial organisations and on discussions with their R.& D. staff. The organisations in question were the Textile Industry Complex at Tetova, Electromontaža at Ohrid, and the Steel Works of Skopje. I enquired at Tetova, where the work force was 6,400, how many industrial operations of similar size were to be found in Macedonia. The answer was 5 or 6, but it was added that there were many other such organisations with work forces around the 2-3,000 level.

44. The information problems which emerged during discussions with these three organisations were virtually identical to those encountered in similar operations in my own and other developed countries. The vital importance of relevant scientific, technical and commercial information was readily acknowledged by all of them, and so were the difficulties of identifying, acquiring and effectively disseminating such information. Lack of information was acknowledged as resulting in duplication of research; costly internal research reports were inadequately exploited because of poor or non-existent information storage and retrieval systems; large sums of money spent on literature

(2 million dinars a year at the Textile Industry Complex) were not as productive as they should have been, because of lack of properly organised control and dissemination procedures; the identification and acquisition of translations was often a problem; the lack of access to foreign data bases and information services was keenly felt. A special problem for the Steel Works of Skopje was how to bring about information provision - and use - at the production level. All in all, the general picture which emerged was one of industrial efficiency being quite significantly impaired by inadequate provision for the flow of the scientific, technological and commercial information which is the life blood of effective industrial performance.

45. In all cases the senior R&D staff with whom I was carrying out discussions expressed a need for properly trained and professionally qualified information manpower. In the case of the Steel Works of Skopje the wish was expressed to enlarge the present library and turn it into an information and documentation centre; it was believed that the appearance and performace of the qualified manpower required for this would almost certainly intensify the need and desire for further manpower of the same type. The belief was also expressed here that there was a need for centralised metallurgical information provision at national level.

46. All these organisations showed very great interest in the possibility which I described to them of creating a course of professional library/ information training, and would be very glad to send suitably qualified staff (in the plural) on such courses. Willingness to make financial contributions was also expressed.

47. Institutes There is a considerable number of research institutes and according to the Law for Scientific Activities each should have an information unit. I was informed, however, that the Law did not define exactly what was meant by this and that in most cases information provision was deficient and inadequate. I visited and carried out discussions at the Institute for National History and the Institute for Earthquake Engineering and Engineering Seismology, both of the University of Skopje; and also at the Hydrobiological Institute of the University of Bitola. They provided an interesting contrast in that the first is essentially humanistic, the second is both scientifically and technologically based, and the concern of the third is primarily with the biological sciences.

48. Institute of National History. The Director of this large and very active research institute (71 staff) is acutely aware of the central role in historical research of professionally controlled documentation. He made the point very forcibly that it is not merely money that is wasted by lack of documentation, but invaluable years of research. To him, library/information specialists who can control and organise the documentation are as important as the historical researchers themselves and, indeed, have a creative role in their own right. He instanced the vital role of documentation in unfolding a definitive history of Bulgaria's relationship with Macedonia in the last 30 years and he also stressed the value of documentalists in supervising the organisation of minutes and other documentation of the assemblies of communes; he said that this latter activity could, for example, throw valuable light on the way in which self-management is working.

49. The Director made as clear and convincing a case as I have ever heard for the value of professional library and information expertise in historical and related research and there can be no doubt at all that

the work of this Institute and others of a similarly humanistic character would benefit enormously from the employment of properly qualified library/information staff.

50. Institute of Earthquake Engineering and Engineering Seismology

This extremely important research Institute, with some 60 scientists, has not only a national but an international role and reputation. Its interdisciplinary activities - Geology, Seismology, Structural Engineering and other related subjects - make its documentation and information problems particularly important and, in many respects, quite complex. In addition to monographs and journal literature its work depends heavily on research reports, theses, and the like, and the indexing and pulling together of material not covered in the main abstracting journal is an important requirement, typical of an interdisciplinary area of research.

51. The small but highly specialised collection of literature is looked after by a very hardworking but untrained "librarian" who is valiantly wrestling with problems of classifying by U.D.C., cataloguing and the like, and also attempting - with no experience or training - to prepare material for a computer-based retrieval system. Scientific work of the sort being carried out by this Institute can benefit immeasurably from skilled and effective information provision and this will become even more important if, as seems possible, the Institute assumes wider responsibilities, embracing coverage and provision for other countries. If this very impressive and well-resourced scientific Institute is to gain maximum benefit from its expenditure and from its formidable scientific expertise the provision and proper use of qualified library/information staff is an absolute necessity.

52. The Hydrobiological Institute. Here, again, is a research institute with an interdisciplinary orientation, but in this instance the area in question is the biological sciences. This Institute has a long history and recognises its very heavy dependence on research literature of various types. It has a collection of some 14,000 items, comprising monographs and "separates", journals (208 titles), microforms and research reports. In addition each researcher tends to build up his separate collection. There is a librarian (unqualified), and catalogue cards of this specialist collection are sent to the National and University Library and also to the (Federal) Bibliographical Institute at Belgrade.

53. The scientific staff are fully aware of the vital importance to them of the documentation and literature of their highly specialised fields and they expressed very great interest in a profile for specialist information service along the lines which I outlined to them. They are particularly attracted by the thought of information specialists who combine scientific, language and information skills.

54. University Departmental Libraries. I saw only one of these- that of the Department of English Language and Literature. It had 15,000 volumes, many of them in very poor condition, and took 55 periodical titles. Its collections were on closed access and service appeared to be minimal. It was in charge of a graduate with no library qualification or training. If, as I understand to be the case, this was typical of departmental library provision, there can be no doubt that the effectiveness of university studies could be greatly enhanced by an upgrading of the library provision for the various disciplines. The form which such upgrading might take raises complex questions, but it is certain that the availability of qualified and experienced

staff would be central to any such improvements.

Some observations on the Library/Information Infrastructure of SR Macedonia

55. In paragraphs 18-23 I identified the elements of the library and information infrastructure of SR Macedonia and in paragraphs 24 - 54 I have made a critical and more detailed assessment of that infrastructure based on my own perceptions, gained from visits and extensive discussions. It is clear that very great progress has been made towards laying the foundations for an effective library and information service, particularly when account is taken of all the other competing claims on Macedonia's resources. In embryo at least - and often much more than that - there is provision (or awareness of the need for provision) for most of the principal sectors which need to be served by library and information units (though there does appear to be a rather serious gap in the case of school libraries, and likewise in formalised information provision for the departments of government themselves). So far as the organisational structure is concerned, the Commission for Informatics and Statistics is currently extremely active in library/information policy affairs, but it must be mentioned that this appears to depend largely on the fact that at present the Secretary of the Commission happens to be a qualified and experienced information specialist.

56. There are inevitably a number of specific weaknesses in the present library/information system - some of them, such as those deriving from lack of overseas currency, being beyond immediate control. There are also some general weaknesses which it is important to work on and rectify if Macedonia is to obtain all the economic, educational, social and cultural benefits that effective library/information services can bring - and if the considerable investment of resources which has already been made is to produce a proper return. Perhaps first and foremost of these general weaknesses is the low level of use of such library and information resources as are available and here I have in mind particularly

the "scientific" collections of the National and University Library and the Macedonian Academy of Sciences and Arts: certainly, materials have been collected and organised, which is the first step; but what is lacking is their full and proper exploitation through effective and positive service to users. Linked with this general problem of lack of use is a general lack of awareness of the importance and value of information, and here it must be stated that experience in the developed world shows that neither use nor exploitation nor information consciousness occur spontaneously: they have to be worked for, and skilled and proselytising professional staff play a key role in this.

57. A further deficiency of a general character has been briefly touched upon already, and that is the urgent need to weld all the separate parts of the library/information system into an integrated whole: here indeed is a supreme example of the whole being potentially greater -much greater- than the sum of the individual parts. Turning again to the developed world, all experience goes to show that effective cooperation and coordination of library and information activity nearly always begins at the instigation of qualified practitioners possessed of a highly developed professional awareness and the professional vision to realise the essential complementary-ness of most individual services - and the consequent scope for mutual interaction and support. An alliance between those in government (or elsewhere), who are responsible for over-all planning, and "grass-root" professional library and information workers, can produce powerful results in rationalising and optimising the use of a nation's library/information services. In SR Macedonia, as elsewhere, the key to such an alliance is the existence of a skilled, professionally qualified labour force.

58. A general weakness of a rather different character is that Macedonian library and information units are in danger of losing contact with

the rapidly changing developments which are occurring world-wide in library and information systems and services. These changes are particularly pronounced in those areas which are based on and utilise the "new information technology", especially library automation and the use of computerised data bases. At a different level it has also to be said that by no means all the staff of all the units I saw had a proper grasp even of the basic elements of manual systems of a traditional type. Here again are weaknesses which for their correction depend principally on the existence of properly qualified professional staff, in sufficient numbers.

59. During my visits and discussions I was of course concerned not only with the actual physical provision of resources and services, but with attitudes. Above all, I wanted to know whether the key role of information in national development was appreciated, particularly at high levels; whether in fact it was realised that information is a vital resource, available in abundance and at minimal expense, a resource which is vital to a modern country's industrial, technological, scientific, educational, social and cultural development. In general, was encouraged. The provision of the infrastructure which already exists is itself a tangible demonstration that the value of library/information service is understood in high places; but even more important was the recognition of this which readily came forward from Ministers, Counsellors, Directors of Research and Development Units, highly placed officials and other important decision makers.

Manpower needs

60. Having considered the stage which library/information development in SR Macedonia has currently reached the question which naturally

arises is "what is the way forward; what is needed to ensure that maximum national benefit will accrue from the substantial investment in library and information provision which has already taken place?" The answer is qualified professional manpower. In the whole of Macedonia, it seems that there are only 5 professionally qualified library/information workers (they hold the Zagreb Master's Degree); the first priority, if progress is to be made, must be to increase this number as rapidly as possible. In paragraphs 56-58 I mentioned just 3 very important weaknesses that are attributable to the lack of properly trained and qualified manpower; these could be multiplied many times. The provision of such manpower, in adequate numbers, is an essential prerequisite if further advances of any significance are to be made. As will be seen from paragraphs 64-68, modern library/information work requires from those who practise it a wide range of highly specialised skills and competencies; at present these are virtually non-existent in SR. Macedonia.

61. The basis for the required labour force already exists in the quite sizeable numbers of graduate staff currently working in the libraries and information units which have been described earlier in this report. To these must be added the qualified staff required to man the Institutes, working organisations, schools, government departments and other organisations which at present have no library/information staff at all, or too few to meet their requirements. To identify the total number of professional staff required would call for a proper manpower study, but it would certainly amount to several hundreds.

62. From this it may be confidently assumed that the number of potential students is such that a course of professional education in library

and information work would be both educationally and economically viable. Simply to catch up with the backlog would in itself require courses for many years to come, but in addition there must be provision for replacing natural wastage and for bringing a steady flow of new entrants into the profession. There is both need and justification for a course of professional education for library and information work which would be a permanent feature in Macedonian higher educational provision.

63. The need for staff with an adequate and appropriate preparation for library and information work is of course not limited to those at professional level: sub-professional, supportive staff are also essential, and in some types of unit they will be required in considerably greater numbers than the professional staff. Sub-professional education and training are outside the terms of reference of this report, but it is worth recording that during my discussions I learned of plans for two-year courses in information work (Informatics) which would comprise the last two years of secondary school; those who had successfully completed them would either go directly into sub-professional library and information work, or proceed to university in the normal way.

The Nature of Present-Day Library and Information Work

64. At this point it is appropriate to say a little about the nature of the work which the professional labour force should be carrying out. For many years now, library and information work has been undergoing changes - many of them quite fundamental. First and foremost should be mentioned a major reorientation which has taken place in much of the work which is carried out in libraries. Traditionally such work was largely concerned with the acquisition of library materials and the technical processes such as

cataloguing and classification which prepared them for use by readers; this implied essentially a passive and conservationist-type of role, with minimal concern for the use and exploitation of the materials in question. Nowadays, however, the emphasis is heavily on use and service - on the active dissemination of information for the benefit of users and potential users. The information role of the library is now very much in the ascendant and one consequence of this is that the sharp distinction between librarians and information workers, common in some parts of the world in the past and, indeed, still persisting in some countries, is no longer valid. R. Sergean, an industrial psychologist, in his major study of the staffing of British library and information services concluded quite categorically that no evidence existed to support the concept of two different and separate professions, librarianship and information science.

65. It must be stressed that this change in orientation, towards the information role, is applicable not simply to specialised libraries (where it has always existed to some degree) nor only to libraries concerned with "scientific" literature. It also applies to modern public librarianship as practised in countries such as the USA and the U.K. where "community information" services provide for the information needs of the ordinary citizen, and where other specialised information services, for example to small industrial firms, are a normal feature of public library service.

66. This change towards an information orientation has interacted with and been reinforced by very important developments in the field of information technology. The computer has revolutionised the approach to many library activities such as the issuing and

control of books, and technical processes such as acquisitions and cataloguing. Centralised, computer-based cataloguing services have drastically reduced the need for individual cataloguing by each individual library, with a consequent re-deployment of professional manpower away from technical processes and into services. Of these services the most spectacular are probably those which utilise specialised, world-wide computer data bases, via on-line working from computer terminals in individual libraries. These data bases are primarily bibliographical in character, but data banks of hard scientific data, business information, statistics, and the like, are also increasing very rapidly. This sort of computer technology, supplemented by Viewdata services of various types, and served by increasingly effective telecommunication systems, has added a new dimension to library work as practised in the developed world; and at the same time it has been yet another influence in breaking down the barriers between library and information work.

67. The use of on-line computer-based services, in the most effective and economical manner has thus become an increasingly important responsibility for the librarian/information worker. To this role as intermediary between the user and the technology there may be added another intermediary function: that of information analysis. This means that the intermediary does not simply provide references and supply the relevant documents, but that he is himself involved in the processes of evaluation, analysis and synthesis of the information in question, and the presentation and dissemination of results. This sort of work, which calls for both subject knowledge and information skills, has always been

practised to a certain extent in some special libraries; it is now becoming more widespread and represents a trend which can be expected to continue.

68. There are of course library activities of a different character which also call for a high level of subject knowledge. For example, the role of subject specialist is becoming increasingly important in many public libraries and in the libraries of academic institutions such as colleges and universities. Such staff, in addition to offering specialised information services, will be responsible for collection development in their particular subjects and for the relevant technical processes, such as classification; in academic institutions they will also liaise with the teaching staff of the relevant departments and provide user education for undergraduate and postgraduate students.

69. One major consequence of these and other changes is that the traditional concept of a librarian as being above all someone with a strong literary bent and background is now completely outdated. Present-day library/information work is multi-disciplinary: it requires practitioners with specialised subject expertise in <u>all</u> disciplines - technology, the pure sciences, the social sciences and the humanities. Moreover, the professional preparation of library/information workers needs to be essentially <u>inter</u>-disciplinary. The subjects which must be covered are wide-ranging indeed: from management and systems analysis and design to subject bibliography; from quantitative methods to information retrieval; from user studies to computer applications. These are considerations which are of the very greatest importance when considering a suitable academic base or "home" for a programme of professional education for library and information workers.

The Location and Level of a Programme of Professional Education for Library and Information Work

70. Location. In principle professional education for library and information work of the sort detailed above could be conducted by any type of post-secondary education institution or, indeed, by a large operational library, and in countries with a long history of professional education of this type, such as the United States or Great Britain, a variety of different approaches was tried during the early years. It is now generally accepted, however, that professional education for library and information work is most effectively carried out in an institution of higher education rather than in an operational library, and that the most appropriate base for it is a university or university equivalent institution (such as a British Polytechnic). Such a base lends itself most readily to the multi-disciplinary and inter-disciplinary needs of library and information work identified in Para 69, above; and it also provides the environment of advanced study and research which is essential for effective learning and teaching in the library/information disciplines.

71. Undergraduate vs. Postgraduate Programmes. Professional education for the library/information profession can be offered either at undergraduate level, when it is normally combined with or in parallel with the study of a traditional academic subject or subjects, leading as a rule to a bachelors degree; or it can be offered at postgraduate level, after a student has already completed a first degree in an academic subject or subjects, in which case it leads to a Masters degree or a postgraduate diploma. In the North American continent the approach is exclusively postgraduate; in some countries - such as Brazil - it is exclusively undergraduate; while in others,

such as Brazil, the United Kingdom and Australia, both the undergraduate and postgraduate routes to professional qualification are available, often within the same institution.

72. Which of the two routes is chosen will depend mainly on a country's distinctive educational traditions and general circumstances but it is worth keeping in mind some of the advantages and disadvantages that experience has shown to be inherent in the two different approaches. In favour of an undergraduate programme it can be argued that it spreads a heavy professional curriculum over a longer period of time (in most countries, 3 or 4 years) than is normally possible with a postgraduate programme (which is normally equivalent to one year full-time). Against an undergraduate programme it is argued that it forces students into a vocational choice at too early a stage, before they have completed their general higher education, and before they have properly established their future vocational interests and aptitudes. It is also argued that the simultaneous study of professional and academic subjects is to their mutual detriment, and that the level of academic subject knowledge finally obtained by such students is inadequate for the needs of present day library and information work.

73. For the postgraduate approach it is argued that such students have the greater educational and personal maturity that comes from having already competed a bachelors degree course, and that their vocational intentions and aptitudes are likely to be more firmly established. Furthermore, the high level of subject knowledge already possessed by a postgraduate student provides an excellent

base for the professional education which is to follow. This professional education, it is argued, will add to existing subject knowledge the sort of information orientation which is needed by the subject specialists and intermediaries, discussed in Paragraphs 67-68 above; not to mention those practitioners involved in the many other professional activities which call for a combination of subject and information expertise. The main disadvantage normally associated with the postgraduate approach is its relatively short duration, which may result in an excessively intensive and concentrated course of study. This is of course less likely to be a problem with a part-time than with a full-time course, since the former is inevitably extended over a longer period of time.

Higher Education in SR Macedonia, with Particular Reference to the University of Skopje

74. Keeping in mind what has been said in the previous paragraphs it is now appropriate to consider the university system of SR Macedonia, giving particular attention to those features which are of importance to any programme which may be established for the professional education of library and information staff. Though there are two universities in the country, one of them - the University of Bitola - is very small (3,000 students) and remote, and attention will be focussed on the University of Skopje.

75. The University of Skopje. This university was established in 1949, since which date it has graduated 45,000 students, with 850 at Masters and 500 at Ph.D, level. Its current student population is 41,000, of whom 24,600 are full time. There are 2,000 full time teachers and in addition, the staffs of the various Institutes.

The university comprises five University Centres :

1 Mathematics and Technical Sciences 2 Social Sciences

3 Biological and Biotechnical Sciences 4 Medical Sciences

5 Arts. Each Centre comprises a number of Faculties and they, in turn, are made up of a number of Departments.

76. Undergraduate Study Students follow a 4 year programme devoted to a particular subject or subjects and leading to a Bachelors degree. During the 3rd and 4th years a student can embark on an additional field of study, and if it were decided to introduce library/information studies at undergraduate level, this would be the mechanism by which it would be achieved. In this connection it is very important to note that undergraduate work is conducted on a rigidly departmental basis; students in one department apparently cannot join courses conducted by other departments or faculties. This would mean, in the case of a library/information studies course, that its membership could not be multi-disciplinary nor its teaching inter-disciplinary. This would be completely incompatible with the nature and needs of present-day library/information work, as set out in Paras 67-69, above, and it is principally for this reason that I cannot support a proposal which has been made that a branch "Librarianship and Information Studies" should be created within the Department of Comparative Literature.

77. Postgraduate Study. In Macedonia postgraduate study is carried out on a part-time basis, while students are working at their jobs; classes take place during evenings, on Saturdays, and even on Sundays. There is no tradition of full-time study at this level although certain candidates from some institutions may be granted up to 6 months of release when nearing the end of their programmes.

Unlike undergraduate courses, postgraduate programmes are not linked with a particular department. One particular Professor is in charge, as coordinator, and teaching staff from all relevant Faculties contribute according to the nature and needs of the course. The staff in question are normally the most senior and experienced. It is also possible to involve the staff of a Research Institute. Overall responsibility for each Postgraduate course is in the hands of a specially created Board. As will be gathered, postgraduate study is essentially inter-disciplinary.

78. At this point it is appropriate to record that for the three senior levels of teaching staff - Assistant Professor, Associate Professor and Professor, a doctorate and an appropriate record of scholarly publication is required; a Masters degree is expected of Assistants. The implication of this for the staffing of a programme of information studies will emerge later in the report.

79. The duration of a postgraduate Masters degree programme is 2 years (4 semesters) of part-time study, followed by the preparation of a thesis. Those who complete only 1 year are awarded the title of Specialist. The optimum number of students for such a programme is considered to be 15-20.

80. Unlike undergraduate students postgraduates do not automatically obtain financial support from the State. It is understood that the relevant body of the Republic Community of Interest for Scientific Activities provides some financial support for postgraduate students, and in some instances support is also forthcoming from industry. It would nevertheless appear that many postgraduate students need to be self-supporting.

81. The inter-disciplinary character of postgraduate study obviously makes it suitable as an approach to professional education for library and information work. Although full-time courses of study are in general to be preferred to part-time, it has to be accepted that the Macedonian postgraduate tradition is one of part-time study. In fact, as a means of meeting SR Macedonia's particular library/information training needs at this present time, part-time study has one particular advantage: it is the most appropriate route by which the large numbers of staff already in post - some of them quite senior - can acquire the professional education which they so urgently need.

82. It will be seen that there are postive and quite powerful arguments in favour of the postgraduate approach to a programme of professional education for library and information work for SR Macedonia. A more detailed examination of the specific implications and requirements of such a postgraduate programme is presented in Paras 100-108.

Discussions with the Minister of Education, the Rector of the University and the Faculty of Electrical Engineering

83. By the time I met the Minister of Education and the Rector of the University my impressions and views of the problems I was investigating had begun to formulate. I was concerned above all to hear their views about library and information matters in general, and to assess their attitudes towards a programme of formalised professiona education leading to a qualification in library/information studies. More specifically, I wanted to hear their views on the relative merits of the undergraduate and postgraduate approaches.

84. The Minister of Education. The Minister, himself a Professor of Pedagocics, believes that what happens at school level is the key to library and information awareness; as recorded earlier, he believes in the need for resource-based learning and the concept of the media resource centre. Beyond school levels he believes there should be an information component in the teaching of every discipline and he clearly appears to have no doubts at all about the vital role of libraries and information in national development.

85. The Minister fully accepts the need for a programme of professional education for library/information workers but stressed the need for help from overseas specialists and for scholarships to enable selected Macedonians to be trained overseas. He made the point that as English is taught in the secondary school there would be no language problem for students selected for training in English-speaking countries.

86. The Minister whole-heartedly accepted the case for a postgraduate programme for Macedonia, rather than an undergraduate programme, and he stressed the need for such a programme to relate very closely to the needs of the working organisations.

87. Having in mind the normal requirement of a Ph.D. and a record of publications for those who teach on university courses I explained to the Minister the very great importance for a course of professional education that appropriate teaching contributions should be made by carefully selected and highly experienced library/information practitioners. He said that it is possible to employ as teachers

professionals who are specialists, but they would not be able to hold university titles. He cited a comparable situation which had arisen with an Educational TV course.

88. The University Rector. The Rector fully accepted the need for a course of professional education in library/information work. He believed that such a course should be carried out at postgraduate level and was not in favour of the undergraduate course which had been proposed as a Branch of the Department of Comparative Literature. One of the more important reasons for these views was the need for an inter-disciplinary approach to professional education in the library/information field.

89. The Rector supported the proposition that the University of Skopje should mount a postgraduate programme in Information Studies but stated that if they were to do this they would need in the first instance external help on the teaching side. He also raised the matter of overseas training for potential staff.

90. On the matter of locating the proposed postgraduate course, he stated that the base with greatest teaching potential was the University Centre for Technical Sciences. This includes the Faculties of Architecture, Civil Engineering, Electrical Engineering, Mechanical Engineering, Chemical Technology, Mining and Metallurgy, Geology and Mining, Mathematics (various branches), Physics and Chemistry.

91. The Rector stated that several full Professors were already involved with teaching various branches of Informatics and that one of them could be in charge of the proposed course. I stressed the vital

coordinating role that must be carried out by whoever was in charge, and that the person in question would need an overall awareness of not only the more "academic" subjects taught on the course, but also the many professional library/information components. I stressed the desirability of having a full Professor of this sort, such as is to be found in charge of similar departments in the USA, the U.K. and elsewhere. The Rector could not promise such a full Professor of "Informatics" in the immediate future and he also mentioned that the lack of an undergraduate base could be a problem. I pointed out, however, that the professional equipment of a present-day library/information specialist comprised an amalgam of subject and information expertise, that the subject component was obtained at undergraduate level, and that this subject knowledge provided the indispensable undergraduate base which, at postgraduate level, would be built upon and orientated - by an appropriate programme of professional education - towards the needs of library and information work.

92. The Rector spoke of the need for an intensive period of preparation for the proposed programme, with a view to commencing in the session 1983/4. He said that a Commission would be formed and expressed the hope that it could collaborate with UNESCO. He himself would try to obtain support from all the relevant socio/political structures within the Republic.

93. Meeting with the Faculty of Electrical Engineering. This Faculty would be very closely involved with the presentation of the proposed Postgraduate course, and after a meeting with its Dean and Deputy Dean I addressed and carried out a discussion with over 40 staff members, involving some from other relevant faculties. I was told

that Informatics is very well developed within the university and that there is already a postgraduate course in the subject, though with an emphasis on the technical aspects. Given time they would expect to be able to build up to take account of library and information applications. In my address to the full group I outlined the wide range and scope of a modern course in information studies. I stressed the fact that although subjects such as computer applications, quantitative methods, and systems analysis and design might well be covered by the skills of existing staff, a whole range of topics of a distinctively professional character, such as information retrieval and bibliography, would also need to be taught. The discussion which followed revealed a very real interest in the points which had been raised; the matters of information flow, control and use evoked particular comment, as did the problems of information consciousness and user education.

94. The Dean and the Deputy Dean (who was also Professor of Electronics) offered their support for the proposed postgraduate course, and assured me that an appropriately inter-disciplinary approach would be adopted, with an emphasis on flexibility.

95. Finally under this head it is worth mentioning that the Electrical Engineering Faculty has a special relationship with the University of Bradford in England (Bradford is twinned with Skopje). Staff are exchanged between the two universities and it is worth keeping in mind the possibility of Bradford University Library staff contributing to the proposed postgraduate programme - particularly as Bradford is a university library with a reputation for the high quality of its information services.

Some Conclusions Concerning a Course in Information Studies for Macedonia

96. It is beyond question that lack of professionally trained and qualified manpower it holding back the development of library and information services in SR Macedonia and that what is urgently needed to overcome this deficiency is a suitable course of professional education. I regard the case for creating such a course as being fully established, and I have no doubt about its viability (see Paras. 61 - 62). The prerequisite for creating such a course, and particularly the staffing implications, will be considered in Paras. 100 - 115.

97. The most appropriate base for such a course is the University of Skopje, and having regard to the nature of the Macedonian higher educational system and the inter-disciplinary character of modern library/information studies, the course should be offered at postgraduate level, leading to a Masters degree; and not at undergraduate level. Its subject matter is best described by the title Information Studies and its content will be considered in Paras 116-117 and the Appendix.

98. The widespread support which was shown for such a course is a very encouraging augury for its success. In particular, it has the vitally important backing of the Minister of Education and Science, the Rector of the University, the Commission for Informatics and Statistics, and the National and University Library; plus, of course, the members of the Faculties which would be most intimately involved in teaching it.

99. My impression of the general Yugoslavian situation is that if such a course were successfully established in Macedonia it would almost certainly be attractive to students from the other Yugoslavian Republics, as was the case with the Zagreb Master's Degree: its long

term role, in fact, could well be Yugoslavian rather than simply Macedonian.

Prerequisites for the Creation of a Course in Information Studies

100. At this point it is necessary to consider the implications of creating a postgraduate course in Information Studies and in particular to attempt to identify the prerequisites and conditions which need to be met if such a course is to be successfully mounted.

101. Teaching Staff. A course in Information Studies is most effectively presented by teaching staff whose full-time is committed to Information Studies, with additional contributions from a few part-time specialists. In Sheffield for example the Department of Information Studies has 11 full-time staff and a number of part-time lecturers; the full-time staff, in addition to being specialists in, for example, computers, or statistical techniques, are also information specialists. The fact that they are full-time and in continuous daily contact with one another makes of course for ease of communication and coordination. This is vitally important in a course which covers a range of quite different subjects which need to be welded together and coordinated in such a way as to present the students with an integrated and unified whole, rather than with a fragmented array of separate "bits".

102. It is recognised that the University of Skopje's approach to staffing postgraduate courses of an inter-disciplinary character is different from that in a University such as Sheffield, described above. In particular, the teaching staff at Skopje would not all be full-time members of one department, but would be drawn from several separate departments or Faculties. This makes it

particularly important that each teacher should have a full awareness of the objectives and the total range of the course as a whole, and of how his own particular contribution fits into the general scheme of things. Ensuring that this is the case represents a very important responsibility for the Professor who has overall responsibility for the course. It is essential that he should be thoroughly familiar with the whole field of information studies - both its academic and its professional components - and it is difficult to see how he could successfully coordinate and run the course without giving it the whole of his time.

103. A postgraduate course in Information Studies raises, then, special problems of coordination. Experience in the developed world shows that such a course will also generate a need for quite a degree of personalised supervision and tutoring. These and other factors have led to the generally accepted view that the minimum complement for a postgraduate course in Information Studies is four full-time staff (some would say six), supplemented by as many part-time specialists as may be necessary. The subjects to be covered by such a course will be considered in some detail in the Appendix, below, but the principal general areas are Library and Information Systems Management and Design, Information Retrieval (including cataloguing, classification and indexing) and Information Resources; all three of them will of course include specialised aspects of computer applications. It is obviously advantageous if the full-time staff can, between them, cover all three of these principal areas of study.

104. Some of the subjects to be taught will already be covered by the present teaching staff of the University of Skopje: for example Computer Applications, Statistical Techniques and Quantitative Methods, Management. However, the needs of an Information Studies course require that these subjects should not simply be taught as they would be in their parent departments: they should be given an appropriate orientation towards library and information work.

105. In addition to subjects of this sort which are basically academic, there is a need to include a considerable number of professional subjects such as Cataloguing, Classification, Bibliography, Academic librarianship, Public librarianship, etc. The teachers for these will need to be carefully selected and highly experienced library/information workers and they will presumably come in the category of "professionals employed as specialists", referred to by the Minister of Education, and mentioned in Para 87 above. The ultimate objective should be to have teachers with this sort of background as the mainstay of the full-time teaching staff, which presumably means that they must acquire Ph.D. degrees and have a suitable record of scholarly publication.

106. Visits of Observation. An essential element in an Information Studies course is a programme of carefully selected visits of observation to operational library/information units which exemplify good modern practice. Identifying such units in the Skopje area and arranging for the visits is an important task for the staff member responsible for the course.

107. Equipment. It is assumed that the course will include strong elements of information technology and this will require that students have ample opportunity for "hands-on" experience at computer terminals and Videotex-type equipment. It is recognised that "live" on-line working to remote data bases is a very expensive business, but a great deal can be achieved at minimal cost via simulations such as those which have been created at the University of Sheffield Department of Information Studies, and which are being used successfully in many different parts of the world.

108. At a different level it is important for students to have access to and experience with a wide range of non-book media such as audio-visual hardware and software:such materials now take their place with books and journals as being essential to the teaching-learning process, and are accepted as a proper concern for library and information units. It goes without saying, that materials of this kind, like computer hardware of all sorts, calls for the availability of skilled technician labour.

109. Professional Literature. There is an extensive literature on the subjects covered by Information Studies, much of it in the English language. I had no opportunity for a proper appraisal of the present holdings of the National and University Library in this field, but my impression is that they are rather weak. It is essential, if a successful Information Studies course is to be created, that funds be available for an adequate collection of monographs, journals, reports, and bench-tools such as the various classification schemes and thesauri. Some of these can be very expensive.

Starting the Course

110. Expatriate Staff. It will be clear from what has gone before that a nucleus of appropriately qualified and experienced teaching staff is essential if the proposed course is to be established as an accepted and respected university programme. If such staff are to hold university teaching posts at senior level the University considers the possession of a doctorate to be essential, but so too is the possession of a high level of professional qualification and experience. People with such a combination of qualifications do not at present exist in Macedonia and a main priority must be to identify suitable potential staff and arrange for their higher education and training; this is discussed in Para 114, below. Until such Macedonian staff are available the course must lean heavily on expatriate specialists recruited on a temporary basis.

111. Head of Course. Of vital importance is the role of head of course - the staff member who will be responsible for creating and implementing the final programme, ensuring the proper coordination of the constituent parts, identifying and briefing the specialist part-time teachers, and carrying out the myriad other tasks associated with a new and inter-disciplinary course at Masters degree level. It is proposed that for this role a senior and highly experienced expatriate be recruited, to serve for as long as it is necessary to train a Macedonian counterpart, who would ultimately take over from him. The person in question should be thoroughly familiar not only with library and information studies, but with the workings and requirements of university institutions.

112. Other Expatriate Staff. The services of expatriate specialists will also be needed for the teaching of those professional subjects for which suitably qualified Macedonian staff are not available. Such specialists are most effective if recruited for a fairly lengthy period of time but if this is not possible, periods of secondment of even a few months duration have proved to be of value in similar situations elsewhere.

113. Overseas Training. In accordance with the University of Skopje's requirements, the potential Macedonian head of course will need to hold a doctorate. This should be in library/information studies and is best obtained in a country with an advanced library/information network which also has a highly developed tradition of doctoral study in the field in question. I would recommend either the United States, where doctoral study combines advanced course work and a thesis, or the U.K., where the doctorate is based exclusively on a very substantial thesis. For this present purpose the balance of advantage may well be with the U.S.A. approach, since advanced course work would add a useful extra dimension to the equipment of the potential head of the Macedonian course.

114. Similar overseas training, to the extent that financial support permits, should be provided for the other specialists who will form the professional nucleus of the Macedonian course. It will obviously be advantageous if their specialised areas of study complement rather than duplicate one another, and Ph.D. topics within the following general areas are recommended : Library and Information Systems Management and Design, Information Retrieval,

Information Resources, Library and Information applications of Computers. If a number of staff are able to undergo overseas training it is obviously desirable that they should not all go to the same country.

115. It is my understanding that funds for overseas training and for the recruitment of expatriates are not likely to be easily available from within Macedonia. The evidence produced in this report constitutes, in my view, a strong case for seeking such support elsewhere.

Course Content

116. In my UNISIST Guidelines for curriculum development in information studies, UNESCO, 1978 I have considered the whole question of course content at some length. The programme I have recommended in these Guidelines is, with one modification, appropriate for Macedonian needs, and the relevant extracts from the "Guidelines" are therefore included as an Appendix to this report.

117. The one modification relates to the thesis. For the Macedonian programme it seems appropriate to follow normal University of Skopje practise, by which the Masters thesis is a separate part of the course requirements and is carried out after successfully completing the rest of the course. It is strongly recommended, however, that there should be a strict time-limit for completion of the thesis - perhaps 18 months or two years - and that it should not be allowed to drag on year after year as can so easily happen in such situations. On a matter of terminology, whenever "Special Study or Dissertation" is mentioned in the "Guidelines" (as in Paras 80(f), 105(e) or 120 of the Appendix), it should be taken to include 'thesis'.

118. Acknowledgements. It must be clear from this report that I carried out a very large number of visits and discussions and that these involved very many people indeed: Ministers, the University Rector, Senior government officials, librarians and information workers, university staff, scientists, Research and Development staff and many others. Without exception they were most helpful and cooperative and gave in abundance of their time. I am indebted to them all. To Mrs. Zdravka Pejova, Secretary of the Commission for Informatics and Statistics, who "master-minded" the whole operation, my debt is particularly great. Not only did she carry out a superb job as coordinator, organiser and interpreter, but her own background as a qualified and highly experienced professional librarian and information worker, coupled with her intimate knowledge of the Macedonian information scene, added an extra and quite invaluable dimension to my whole programme. I am also indebted to her and to several others for generous personal hospitality. Finally, thanks are due to my wife, herself a professional librarian, who was present at all discussions, visits and lectures, acted in a general secretarial capacity, and provided the "double-check", the second pair of eyes and ears,that are so very helpful on missions of this character.

Appendix

COURSE CONTENT (see main Text, Paras 115-116)

The following paragraphs concerning course content are extracted from W. L. Saunders, UNISIST Guidelines for curriculum development in information studies, UNESCO, 1978.

80. Scope and range of information studies. In simple and very general terms the concern of information studies is with the transfer of knowledge, or information, or imaginative simuli from one human mind to another. This statement begs many questions of definition and ignores many of the subtleties which emerge from the

fascinating and important discussions which abound in the theoretical literature of the field, but for the present purpose it provides an adequate indication of the bounds within which curriculum creation and development should be considered. Careful examination of the publications identified in the previous paragraph will give some indication of the variety of topics which can legitimately be covered by an information studies curriculum and of the large number of possible approaches. To pick a way through these many alternatives is no easy matter and it must be emphasized once again that there is no definitive, "all-purpose" answer. It is possible, however, to approach our subject in such a way that the principal areas of study which collectively make up information studies will emerge, and provide a structure upon which a curriculum may be built. These areas comprise the following:

(a) human communication: a foundation course;

(b) user studies;

(c) sources of information;

(d) information/data storage and retrieval;

(e) organizational aspects;

(f) dissertation;

(g) electives.

In Section VII, each of these areas will be expanded in terms of specific courses; but first, the scope and rationale of each of them will be discussed in general terms.

81. (a) Human communication: a foundation course. This first area of study is concerned with a general overview of human communication - of what is involved in "the transfer of knowledge, or information, or imaginative stimuli from one human mind to another". It will provide a context, or foundation for the more specialized areas which will follow.

82. Human communication, for this particular purpose, can be thought of from two points of view: theoretical and practical. For the theoretical component it is recommended that the scope note in Schur's Education and Training of Information Specialists[1] be followed. He itemizes the senses; the brain; cognition; recognition; memory; learning; signs, language, signals, codes; oral, written and other means of human communication. In a basic course it will not normally be necessary or appropriate to aspire to any great depth in the treatment of these subjects but it will be noted that Schur's definition provides the opportunity to study information science at a theoretical level and to as great a depth as may be feasible or appropriate. This section of the syllabus will also afford the opportunity to study the important matter of the relationship between information science and various cognate disciplines, a relationship which is in a continuous state of change as information science itself develops.

83. The practical component provides the means by which the communication process may be considered in more tangible terms. "Information" can be presented from the point of view of its genesis, or generation, its preservation, storage, retrieval and utilization. These aspects can be translated and presented in terms of the activities, mechanisms and institutions which collectively encompass the whole process of information transfer: for example publishing, libraries and documentation

units, information services, classification and indexing, resource sharing, and the like. This general overview, in its turn, will provide a natural lead-in for consideration of the total library and information infrastructure at national, regional and international level. Again, the object will not be to consider any particular aspect in great depth, but rather to provide a general context within which the role and activities of any individual information worker or any institution, however specialized, can be viewed. It is of great importance that from the beginning the information specialist should think of himself and his activities not in isolation, but as a link in the total communication chain; that he should see information resources in global rather than parochial terms; and that he should move naturally into an approach which takes full account of - and extracts maximum benefit from - resource-sharing and networking arrangements. In this connection it will be apparent that this first, foundation area of study will afford an appropriate opportunity for introducing students, at a very early stage, to the UNISIST programme and the NATIS concept.

84. (b) User studies. Having established through the foundation course a general context for further, more detailed study, it is appropriate to proceed to the second area - a consideration of user studies. It is now generally accepted that the "client", the user, should be the focus, the starting point, for any systematic approach to information studies; and that programmes of education and training should be characterized by a strong user orientation. This particular section will therefore give scope for the study of the user from a number of different points of view.

85. At an early stage it will be important to bring out those differences in library and information user needs which depend on geography, stage of development, social, economic and political structure, and national culture: for example, the difference in attitude towards recreational reading in a newly-developing tropical country, where the culture is transmitted largely by oral means, from that of a European country in a temperate zone, with centuries of literary tradition behind it; or the differences in the information needs of a predominantly village-based working population, whose major concern is agriculture, from those of a highly urbanized industrial population. Consideration of factors of this sort will very quickly demonstrate the need to approach a country's library and information provision via an assessment of its own, distinctive needs, and not by the wholesale transplanting of practices and systems from environments of a very different character.

86. A second and likewise very important element in user study is the consideration of the distinctive library and information using behaviour and needs of specialized groups, for example individual professions and specialized disciplines. This should be extended further to a consideration of those differences which reflect the character and objectives of different environments: for example industry as compared to the academic world or government. It is recommended that as broad a coverage as possible should be attempted for all students but that this should be supplemented by in-depth study of one or more particular groups or working environments. Experience has shown that for a really meaningful approach to the study of the user it is not sufficient to draw on the very extensive corpus of recorded user studies: it will also be necessary to give some attention to the nature of the discipline or specialized activity that is being studied. The difference in methods of study of humanists and scientists, for example, has quite profound implications for library and information provision; the pressures and objectives of the industrial environment make the information needs and information-using behaviour of an industrial chemist significantly different from those of his academic counterpart.

87. In studying user needs and user behaviour the student will inevitably be exposed to the findings of surveys of need and surveys of use. These are mainly presented in quantitative form, which underlines the need for present-day library and information workers to be numerate as well as literate. There is a strong case for requiring all potential library and information workers to have at least a general grasp of surveying techniques, if only to enable them to assess and monitor the needs of users of systems for which they themselves may be responsible. Such knowledge is best gained not in isolation but as part of a general course in quantitative methods, as referred to in paragraphs 104 and 119 below.

88. (c) Sources of information. This third area of study is concerned with the means by which the needs identified in area two, above, are satisfied. There was a time when the curriculum for this area took a narrowly bibliographical approach, and the principal requirement of the student was that he should have a fairly detailed knowledge of major bibliographical and reference works. For present-day purposes it is necessary to recognize that sources of information are not limited to the documentary but include, for example, audio-visual materials and computer data bases; and that, furthermore, though many of these data bases provide bibliographical information, there are others which are numerical in character. A further, and very important dimension is provided by the recognition that many valuable sources of information are neither documentary nor computer based, but personal: that a good deal of information work depends on knowing not just what to consult but who, or which institution to consult.

89. For curriculum and teaching purposes the most fruitful approach to this area of study will normally be via groups of disciplines: science and technology, social sciences, and humanities. It is desirable that all students should be exposed to an overview which will consider all three groups, together with sources of a general or pervasive nature. Though necessarily superficial such an overview should bring out the distinctive character of various types of information source and lead naturally to a consideration of the general principles of bibliographical control and collection building. This general study of information sources should be supplemented by the study in depth of the information sources available to a particular discipline or group of disciplines - not so much with a view to an exhaustive and detailed knowledge of the sources in question, but rather with the objective of identifying and extracting a methodology which may often be applicable to information work in other, related disciplines.

90. This is a field of study in which a practical component is extremely important. Carefully devised practical exercises requiring a systematic approach to the pursuit of information and the actual handling and utilization of information sources are essential. These should be so designed as to bring out the reference and search strategies appropriate to all the principal fields of knowledge. If resources permit, such exercises should also involve the student in actual "hands-on" experience of interaction with computer data bases.

91. Related to practical reference and information work is the preparation of analytic literature reviews, and, indeed, the whole subject of presentation and dissemination of information, both in bibliographical and narrative form. There are, of course, other aspects of this subject - for example those which will be covered under reprographics, in area (e) - but this present area is the one in which it is likely to be most appropriate and convenient to carry out the relevant practical work in presentation and dissemination of information.

91(a) It will be apparent that there is a certain parallelism between what is studied in this area and what is studied in area (b): for example user behaviour and needs in the social sciences and sources of social science information. For

this reason there are obvious advantages in so phasing the teaching programme that related topics in each area are studied at the same time. It must of course be accepted that this will not usually be possible for part-time students who are likely to be approaching their studies module by module.

92. (d) Information/data storage and retrieval. As its name implies this area of study is concerned with the means by which information workers organize information and data for storage and subsequent retrieval and use. In the past it has often been designated the organization of knowledge and it is in fact a subject with a very substantial theoretical base. Its more practical manifestations are seen in the long-established activities of cataloguing, classification and indexing, and the emphasis until recent years has been primarily on bibliographical classification schemes and codified approaches to cataloguing. The importance of the latter is diminishing as access to centralized sources of cataloguing data becomes more widespread; and the study of indexing systems, with increasing emphasis on faceted principles of classifying for retrieval has tended to rival, if not supplant, the study of bibliographic classification schemes.

93. Whatever the emphasis selected for a particular situation the study of this area must be solidly based on the fundamental principles of classification, indexing and cataloguing and, at an appropriate stage, the student should be led to the critical examination, analysis and evaluation of performance of retrieval systems.

94. In addition to a strong emphasis on theory, the study of information storage and retrieval calls for a very substantial practical component. Carefully selected exercises in relevant cataloguing and classification systems, the major aim of which should be to bring out important principles, should be carried out by all students. These should be related above all to the actual practices and needs of the countries and institutions which the students are being trained to serve. The emphasis on principles is important: as already made clear it is neither desirable nor feasible for the training institution to aspire to produce fully trained cataloguers and classifiers: this sort of expertise comes only with lengthy experience on the job, in actual operational situations. In addition to practical work on classification and cataloguing it is now widely accepted that for a proper understanding of modern approaches to information storage and retrieval it is beneficial for students actually to construct a faceted scheme for a particular topic and to carry out exercises in thesaurus construction.

95. An important component in the study of information storage and retrieval is the study of computer methods, though it is recognized that in some developing countries the realities are such that computerized services are still some way off. Nevertheless, all students should be expected to attain a basic understanding of the computer, its limitations, and its potential in information and data storage and retrieval, and this should be exemplified by the study of selected computer-based information/data systems. If resources permit there should also be a practical component to this study: the construction and running of an elementary programme.

96. The point needs to be made that a knowledge of computer basics, as required for this course, is also necessary for the study of library automation, as set out in (e), paragraphs 103 and 119 below. In practice, therefore, there must be a certain amount of integration between these courses, though it is convenient at this stage and for the present purpose to consider them under two different areas of study.

97. (e) Organizational aspects. In previous areas of study the emphasis has been primarily non-institutional, i.e. on the more general aspects of information transfer and the communication process. In this present area we turn to implementation, to

the realities of creating and operating the various units which together make up the total information infrastructure. For a full understanding of the role and operation of an individual unit, it is first of all essential that the student should be able to see it in both a national and an international context, and this area of study should therefore include systematic coverage of the national and international library and information network. This will, of course, build from the introductory, basic presentation of this theme which commenced in area (a).

98. The most substantial component in this area, however, will be provided by a thorough study of management principles and techniques which, as already stated, is a subject of particular importance for students from developing countries. There is a substantial and well-defined core to this subject which is of general application, and not peculiar to the information field, but it will be necessary for the information studies student to go beyond this. He will need to give special attention to the varied types of environment and objectives which characterize different types of library and information operation. This will require him to be aware of the distinctive operational, constitutional, legal, political and other constraints within which, for example, a public library operates, as compared with those to which the library of a university or the information department of a research institute is subjected. Since it is likely that few students will know until they complete their training exactly what type of unit they will be working in it is recommended that the whole spectrum of library and information activity should be studied from this point of view though necessarily at a general level. There should, however, be an opportunity to study one particular sector in greater depth. For this purpose the three principal types - academic, public and special - provide a framework which will accommodate the detailed study of virtually any type of operational unit.

99. This same framework will also provide the means by which more detailed study may be made of what is involved in the actual operation of library and information systems. These operational aspects will of course have been covered in general terms by the study of management principles and techniques, but they are sharpened and illuminated when considered in relation to one particular type of unit. Useful guidance to what is required is to be found in Schur's[1] scope note 4.5 ISR system operation which includes methods and procedures; functions and structure of the system; operational problems of ISR subsystems, output, input, processing and storage, feedback, control; problems of equipment, accommodation, staff, data base, methods; operational targets; staff, operational and financial control; evaluation; effectiveness, efficiency.

100. It will be observed that this offers a framework which can accommodate study in varying degrees of depth and detail. It will cover for example the different ways in which a unit may be organized and the staff deployed for maximum operational effectiveness, but if necessary this could be taken a step further and detailed attention be given, for example, to the organization and staff utilization of specialized departments - for example, technical services or the information department.

101. At a different level, this framework for considering actual operational requirements and activities gives scope for the study of reprographics and the binding and preservation of documentary materials. The former is of such universal importance that it should be required of all students; the latter is of particular significance in tropical environments, but its degree of coverage - as with many topics with an operational orientation - should depend on local circumstances and requirements.

102. Finally, reference must be made to two further topics which belong to this general area of study: automation and quantitative methods.

103. Automation. The concern of this topic is with the application of basic principles of systems analysis and design to automatic data processing in libraries and information units. The "housekeeping" areas of principal concern are acquisitions, serials, cataloguing and circulation, and the critical reviewing of existing automated systems should be supplemented, if possible, by demonstrations of actual operational systems. As already stated, the study of computer basics which is a prerequisite for this course provides common ground with the study of computer methods for information storage and retrieval.

104. Quantitative methods. Effective management is heavily dependent on a continuous flow of information of a statistical or quantitative character; this provides a basis not only for monitoring current operations and activities but for forward planning. It is therefore important that information managers should know enough about surveying techniques and statistical methods to be able to set up appropriate systems for collecting the necessary information and, having collected it, to be able to interpret it correctly as a basis for future action. Knowledge at a fairly elementary level is all that is required for most operational purposes and the emphasis of the course of study should be essentially practical. Concern should be less with the niceties of statistical technique than with demonstrating their relevance to library and information work and drawing on as wide a range of practical examples as possible.

105. (f) A special study or dissertation. The range of a basic course is such that most topics have necessarily to be dealt with at a general, even at times a superficial, level. It is therefore advisable that some part of the course should afford the student an opportunity to study a topic of particular interest to him in considerable depth. This can be achieved by a requirement for a special study or dissertation which will involve the student in the preparation and presentation of a substantial piece of work. If the topic is carefully chosen and if the supervisor ensures that the student's approach is appropriately rigorous, preparing the piece of work should afford the student a small-scale experience of the discipline and requirements of research, in addition to the satisfaction of covering at least one topic in considerable depth.

106. (g) Electives. Section K, curriculum, in IFLA Standards for Library Schools(5) commences with the statement that "The curriculum should consist of a unified series of courses and other educational experiences, designed to meet specific program objectives... All students should study certain fundamental 'core' subjects as well as more specialized electives". The nature of this "core", as perceived in these guidelines, emerges from areas (a) to (e), as described in paragraphs 81 to 104 above. It is believed that the study of all of these areas is essential for a basic course and it is clear that they cover between them such a very extensive range of topics that the scope for the inclusion of electives will be strictly limited. Nevertheless, the advantages which result from studying a specialized topic in considerable depth - which is the purpose of an "elective" - justify the inclusion of at least one elective in a course of study, and in some situations it may even be decided that a second elective is sufficiently important to justify its replacing the special study or dissertation. The range and nature of the electives which are offered will of course largely depend on practical considerations such as the special capabilities of the staff of the teaching institution or the availability of specialist visiting lecturers, or lecturers from other, cognate departments. Above all, of course, the range of electives should try to reflect as faithfully as possible the particular needs of the country or region for which students are being trained.

VII. COURSE COMPONENTS

107. In the previous section consideration was given to the scope and objectives of the seven areas or courses of study which collectively make up a basic programme in information studies. In this present section the specific components which make up each course or area will be designated. These should be read and used in combination with Section VI.

108. The point has already been made that although it is convenient and sensible for teaching purposes to divide the curriculum into well-defined and distinct areas of study, there is an interconnectedness between these various areas. The student should be constantly made aware of this and it is naturally much easier to achieve this objective if he is studying full time. It is then possible to arrange the phasing and timing of the study of individual areas and topics in such a way as to bring out interrelationships with maximum clarity. It is recognized, however, that full-time study is not always feasible or desirable and each of the seven areas of study which are set out in detail below can in fact be regarded as a self-contained module. Each of these modules can be studied separately - in series - rather than in parallel, as on a full-time course. The order in which modules are studied is not important except that area (a), Human communication: a foundation course, must be studied before all others and it is highly desirable that this should be followed by area (b), User studies. It goes without saying that if a particular elective builds from and assumes previous knowledge then it must follow and not precede the study of the area in which that subject is studied at basic level.

109. Equal weight is not attached to each area of study and for general guidance the following allocation of time over a complete basic programme is recommended:

area (a) - Human communications: a foundation course	7½%
area (b) - User studies	7½%
area (c) - Sources of information	20%
area (d) - Information/data storage and retrieval	20%
area (e) - Organizational aspects	20%
area (f) - Special study or dissertation	15%
area (g) - Electives	10%

110. Requirements of different functional categories. Implicit in the above allocation of time is the assumption that the objective is to prepare students, via a general course, for careers that may develop in a whole variety of directions; and that the programme will provide the essential generalist basis from which future specializations of all sorts will be able to develop. The proposed programme is suitable for operational staff, for R&D personnel and for future managers, though in the case of the last two categories it is assumed that they will need further and more specialized training as it becomes clear that their future lies in R&D work or management, respectively. If, as may sometimes be the case, it is known at the basic training stage that particular students are destined for R&D or management, it is at least in principle possible to alter the emphasis of the basic programme accordingly. In practice of course these students are likely to be members of a larger group, most of whom are likely to be destined for operational duties, and resources would not permit the provision of a special or individual R&D or management orientation for the relatively small number of students with special requirements. If, however, such individual treatment should prove to be feasible, it is recommended that for both categories of student the time devoted

to area (c) Sources of information and area (d) Information/data storage and retrieval should be reduced in each case from 20 per cent to 15 per cent of the total. In the case of future managers the time thus saved should be added to that allocated to area (e) Organizational aspects, thereby increasing that area's allocation to 30 per cent of the total time available. In the case of future R&D personnel the extra 10 per cent of time should be allocated to area (f) Special study or dissertation. With 20 per cent instead of 10 per cent of the total time available this area will assume a greatly - and appropriately - enhanced importance. Much more thorough and detailed attention to research methods and design will be feasible and the dissertation itself should be planned with a view to providing a realistic and effective lead-in to the type of R&D work with which the student's career is likely to be concerned.

Paras 111-113 have been removed as they are not

relevant for the present purpose

114. Modules and their content. The recommended components of each individual area of study are set out below:

115. Area (a) Human communication: a foundation course

(i) theoretical aspects (for details see paragraph 82):

the information transfer process;

the nature of library and information science;

(ii) practical aspects:

national and international library and information infrastructures.

116. Area (b) User studies

(i) user behaviour and user needs:

general environmental factors (geography, culture, etc.);

characteristics of specialized environments, individual disciplines and groups of disciplines, professions/occupations.

(ii) user behaviour and user needs: specialist study

either a specialized environment, e.g. industry, government, higher education;

or a specialized group of disciplines - science and technology, social sciences, humanities;

or a specialized professional or occupational group, e.g. medical practitioners, agriculturists.

(iii) user survey methods; best studied as an element in a quantitative methods course, under area (e).

117. Area (c) Sources of information (documentary, audio-visual, computer-based and institutional)

(i) general survey (to encompass the whole spectrum of disciplines);

(ii) reference and bibliographical resources;

(iii) specialized study of information resources in

either science and technology;

or social sciences;

or humanities;

Practical - manual literature and reference searches

searches of computer data bases

presentation and dissemination of information.

118. Area (d) Information/data storage and retrieval

(i) principles of cataloguing, classification and indexing;

(ii) computer methods;

(iii) systems and schemes: comparative study and evaluation;

Practical - exercises in cataloguing

exercises in the use of selected bibliographical classification schemes

construction of a faceted classification scheme

exercises in thesaurus construction

exercises in abstracting

construction and running of an elementary computer programme.

119. Area (e) Organizational aspects

(i) management principles and techniques;

(ii) systems environments and objectives;

(iii) either national library and information systems

or academic library and information systems

or public library systems

* or special library and information systems

or school libraries and resource centres;

(iv) systems operation;

(v) reprographics;

(vi) mechanization and automation;

(vii) quantitative methods.

120. Area (f) Special study or dissertation

Research methods. (This is envisaged as a brief course intended to outline the methods appropriate to different types of library/information research: historical, deductive, inductive, etc.; and also to cover the elements of research design to the extent required by the special study or dissertation.)

121. Area (g) Electives

The topics which follow are exemplary and not intended as a comprehensive list. The electives to be offered will depend above all on local resources and local needs.

Historical studies of library/information work
International and comparative librarianship and information work

Historical bibliography
Analytical and descriptive bibliography
Printing and book production
Publishing and the book trade

Archive administration and record management
Elements of palaeography

Library services for young people

Library planning

Advanced computer programming.

* This could include, for example, Biomedical Information Service.